



Monterey Bay National
Marine Sanctuary
Exploration Center
in Santa Cruz

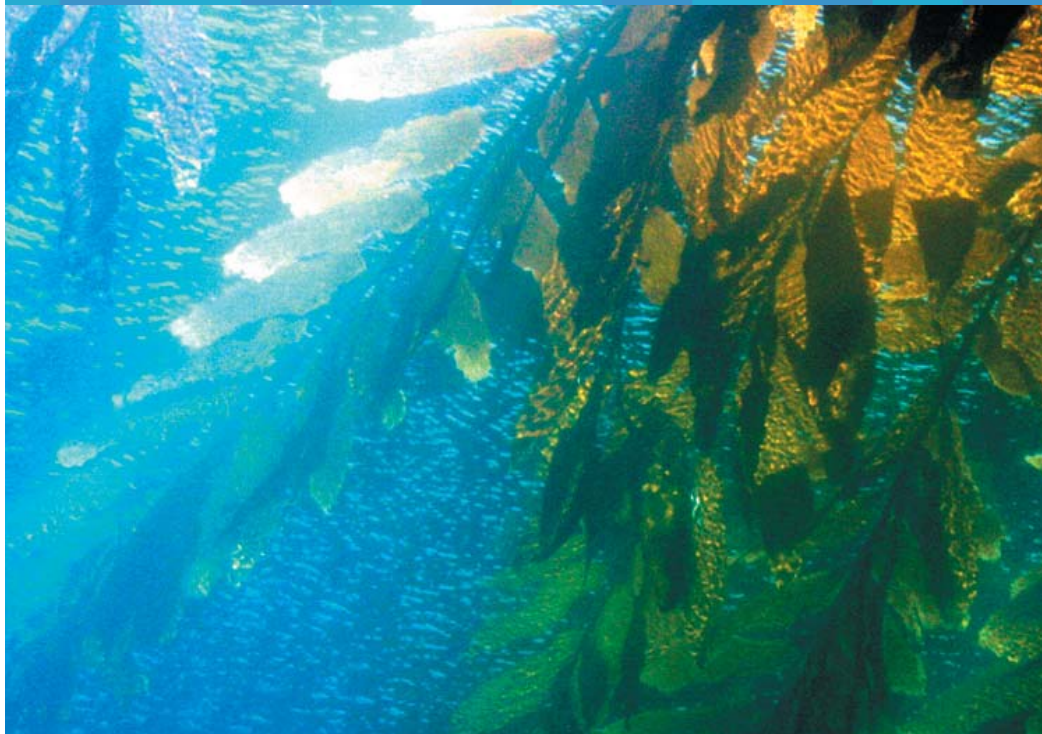


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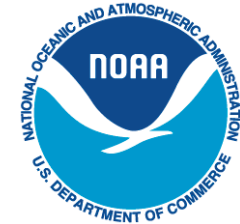
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Introduction

Monterey Bay National Marine Sanctuary

Each year, approximately four million tourists visit the Santa Cruz, California, Beach Boardwalk area. The average visitor may spend two to three days in the area, yet may be unaware that they are near one of the richest coastal and marine areas in the world. In 1992, the federal government established the Monterey Bay National Marine Sanctuary (MBNMS) for the purpose



of research, education and protection of the natural and cultural resources found within this national treasure. Stretching along California's Central Coast from Marin to San Luis Obispo County in Cambria, the MBNMS encompasses more than 5,300 square miles of ocean with more than 275 miles of shoreline and is one of the largest protected areas in the world. Supporting one of the world's most diverse marine ecosystems, it is home to thousands of species, including mammals, seabirds, fishes, invertebrates and plants, as well as 150 documented shipwrecks.

The National Marine Sanctuary Program (NMSP) is collaborating with the City of Santa Cruz and the National Marine Sanctuary Foundation (NMSF) in a public-private partnership to design and build the MBNMS Exploration Center. It will encourage visitors to examine this remarkably productive marine environment, the issues impacting the sanctuary and their personal roles in protecting one of our nation's treasures. Located just steps from the ocean in Santa Cruz's famed beach area, this facility will provide state-of-the-art, interactive interpretive exhibits to an anticipated 200,000 visitors annually. The new Exploration Center will also highlight environmentally sustainable design and construction methods.

Exploration Center Mission

As the gateway to Monterey Bay, the future Exploration Center serves the entire Central California region and beyond, and will foster stewardship of the Monterey Bay National Marine Sanctuary (MBNMS) by connecting people with and educating them about the water, geology, ecosystem, and the extraordinary diversity of its waters.

Exploration Center Highlights

The Center will be:

- Architecturally distinct, two-story, 10,600 sq. ft. building overlooking the ocean;
- Designed to meet the U.S. Green Building Council's standards for Leadership in Energy and Environmental Design (LEED).

The visitor will experience:

- Dynamic, interactive and multi-media exhibits designed for both children and adults;
- A theater with wide-screen, real-time, underwater video;
- Hands-on samples of geology and watershed and biodiversity displays;
- How to appreciate and preserve the natural resources in the sanctuary.

Visitors may choose to interact with English or Spanish for each exhibit:

- Banners in English and Spanish to introduce each area;
- Key concepts translated into Spanish on the graphic panels and video displays.

The building will contain:

- State-of-the-art teaching classroom;
- Gift shop;
- Administrative offices.

The building will serve as:

- A multi-modal transportation center with a potential rail stop;
- Bicycle facilities;
- Pedestrian connections to the City of Santa Cruz's central Depot Park.



Santa Cruz Beach Boardwalk and Wharf Area-Exploration Center Site

Goals

Involve and educate visitors about the sanctuary's unique and fascinating coastal and marine natural resources.

Instill in visitors a sense of personal stewardship with regard to the sanctuary and an understanding of how to help protect it.

Provide orientation for visitors as they enter the sanctuary, so they will use and enjoy it in a responsible and sensitive manner.

Construct an environmentally sensitive building that will demonstrate the advantages of sustainability.



Architects sketch of Exploration Center

The Building and Site

After a two-year and 23-site evaluation process by AMS Planning & Research, a three quarter acre site was chosen. The property is prominently situated and highly visible from the wharf and boardwalk areas. This is a very active section of Santa Cruz.

The City of Santa Cruz offered the use of this site free of charge to the National Marine Sanctuary Program and is working closely with the Monterey Bay National Marine Sanctuary by managing the construction project.

The Exploration Center will be just steps from the ocean in Santa Cruz's famed beach area at the corner of Pacific and Beach Streets, located in a district rich in visitor-oriented facilities and recreational attractions. The Municipal Wharf, the world-famous Santa Cruz Beach Boardwalk, Steamers Lane, Depot Park and Lighthouse Point are all within an easy walk of the site. A recently constructed pedestrian and bike trail links with the site as well. This ADA-accessible trail also will connect to the proposed site of the Santa Cruz Natural History Museum, which will provide opportunities to create a vibrant hub of activity, integrated pathways, interpretive elements and community spaces.

The site also provides a perfect venue for interpreting watersheds and human impacts on water quality within the sanctuary. Roaring Camp Railroad utilizes an active rail line bisecting the site and carries passengers up and down the San Lorenzo Valley watershed. The mouth of the San Lorenzo River and Neary Lagoon are adjacent to the site.

The building is an architecturally distinct, two-story building with a gentle roof line, a highly visible interior and second-floor views to the ocean.

U.S. Green Building Council's standards for Leadership in Energy and Environmental Design (LEED) is a nationally accepted benchmark for the design, construction and operation of green buildings. LEED emphasizes scientifically researched and state-of-the-art strategies for sustainable site development with emphasis on water consumption, energy efficiency, materials selection and indoor environmental quality.



An eco-charrette report by Green Building Services and Thomas Hacker completed in 2006, selected the following sustainable building practices for the Exploration Center:

- Recycled content in building materials (steel, fly-ash roof)
- Forest Stewardship Council-certified wood products
- Natural daylighting through skylights and windows providing ample indirect lighting to reduce need for electricity
- Use of low-VOC materials to assure good indoor air quality
- Photovoltaic roof panels to generate 30% of the electricity for the site
- Natural ventilation
- Gray water will be collected for exterior irrigation and for flushing toilets
- Waterless urinals

These green building elements will create an outstanding visitor and staff environment, while reducing long-term operating costs for the facility.

The building has four primary elements: exhibits, a classroom, administrative space and a gift shop.

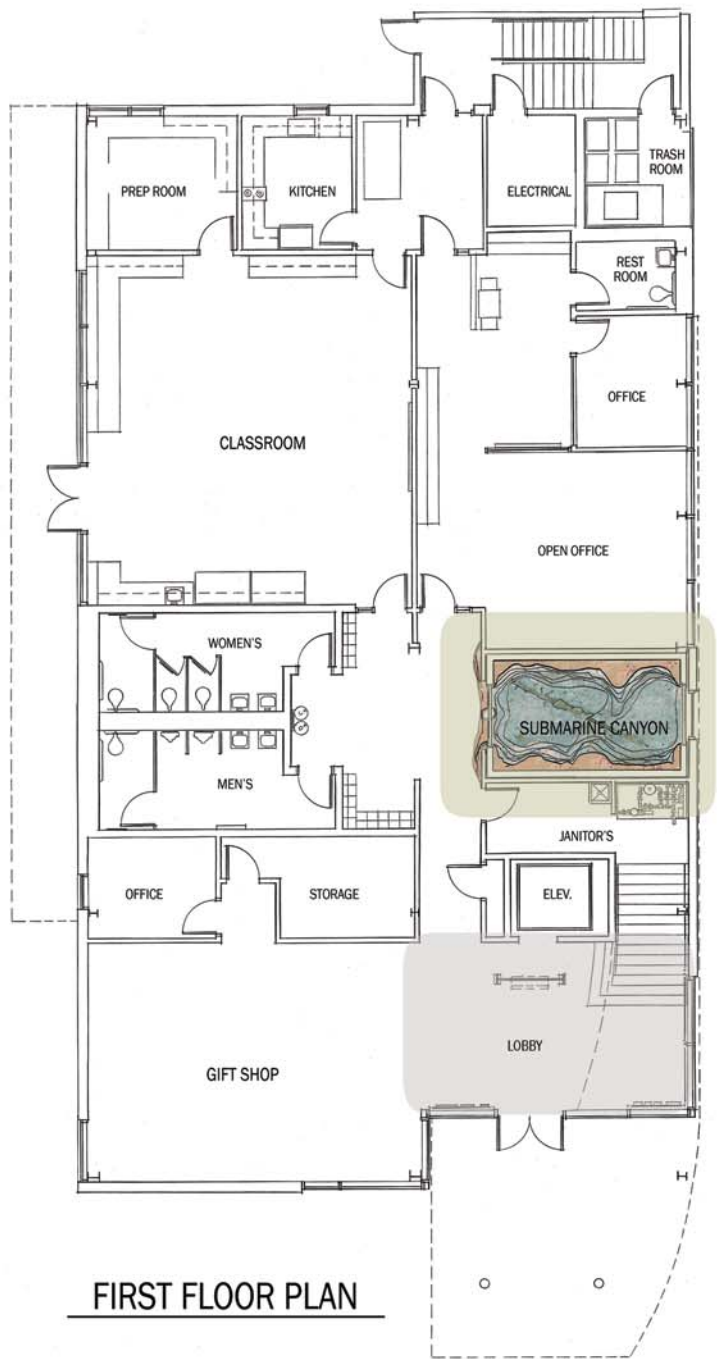
Exhibits: Exhibits occupy the lobby and the second floor of the building.

Classroom/Multi-use room: The 800-square-foot classroom on the first floor will accommodate K-12 school groups, teacher programs, public programs and community events. A catering kitchen will be adjacent to the classroom.

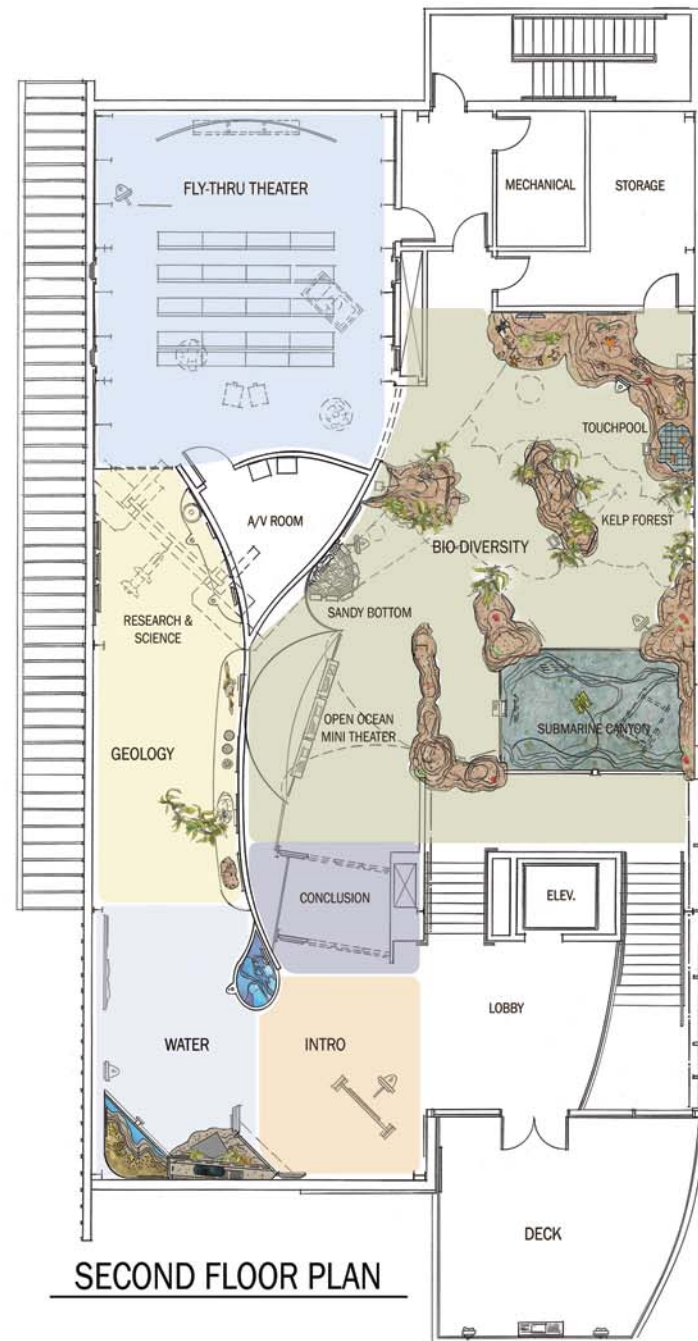
Administration: A flexible, open office space is planned on the first floor to accommodate up to six staff and/or volunteer team members. Plans also include one closed office and a small conference room.

Gift Shop: The Gift Shop will serve as a primary revenue source since admission to the Visitor Center will be free of charge. Storage space and a single office are located adjacent to the Gift Shop.

SPACE	AREA (NSF)	QTY	TOTAL
Exhibits			
Lobby	400	1	400
Exhibit Space	3500	1	3500
Exhibit Maintenance	120	1	120
		Subtotal	4020
Classrooms			
Classroom/Multipuse Room	800	1	800
Prep Room/Storage	150	1	150
Kitchen	120	1	120
		Subtotal	1070
Gift Shop			
Bookstore/Gift Shop	600	1	600
Gift Shop Storage	120	1	120
Gift Shop Office	80	1	80
		Subtotal	800
Administration			
Reception/Open Offices	80	6	480
Education Staff Office	120	1	120
Conference Room	100	1	100
Copier/Printer Room	100	1	100
Staff Restroom	50	1	50
Storage	50	1	50
		Subtotal	900
Restrooms			
M/W Restrooms	120	2	240
		Subtotal	240
TOTAL EXHIBIT & PROGRAM SPACE			6910
NET GROSS AREA			3622
TOTAL GSF			10532



FIRST FLOOR PLAN



SECOND FLOOR PLAN

Exploration Center Exhibits Walkthrough

Welcome to the Sanctuary

Visitors enter the center through the Lobby doors. Here they face an attractive stairway and elevator leading to the upper floor exhibits. Signage clearly indicates the offices, classroom and restrooms.

Led up the stairs by the sound of wind, waves and gulls, visitors climb a stairway lined with beautiful images of the Monterey Bay National Marine Sanctuary (MBNMS). A window on the Landing allows visitors to see into a water-filled tank re-creating a part of the Monterey Submarine Canyon. They can also reach this mid-level by taking the elevator from the first floor.

At the top of the stairs, visitors may go onto the deck or interact with an enticing video kiosk that describes the 14-site National Marine Sanctuary program. Nearby, graphic panels introduce the Monterey Bay National Marine Sanctuary, including a site relief map, a brief explanation of what they will see in the galleries and highlights of some of the activities going on at the sanctuary.

Sanctuary Introduction

On the Deck, visitors see an incredible view of Monterey Bay! Place names and arrows on the railing identify the sights. A mounted telescope/Viewmaster shows historical photos of this area when it was a busy fishing port and other images of what the bay might look like if not for its protected status. An interactive weather station shows visitors real-time weather, surf and buoy reports. A wall panel explains the design features and materials that qualify the building for a LEED (Leadership in Energy and Environmental Design) rating.

Where does your water go?

Back inside, visitors find a cutaway of a classic station wagon above a storm drain big enough for kids to climb into. A video of motor oil and other pollutants washing down the drain help visitors make the connection between what people do on land and what happens in the water. Graphic panels nearby define and describe this watershed and explain why clean water is so vital to life. The panels discuss the sanctuary's water quality monitoring program and talk frankly without preaching about different ways that humans affect the creatures within the sanctuary, including indirect effects, such

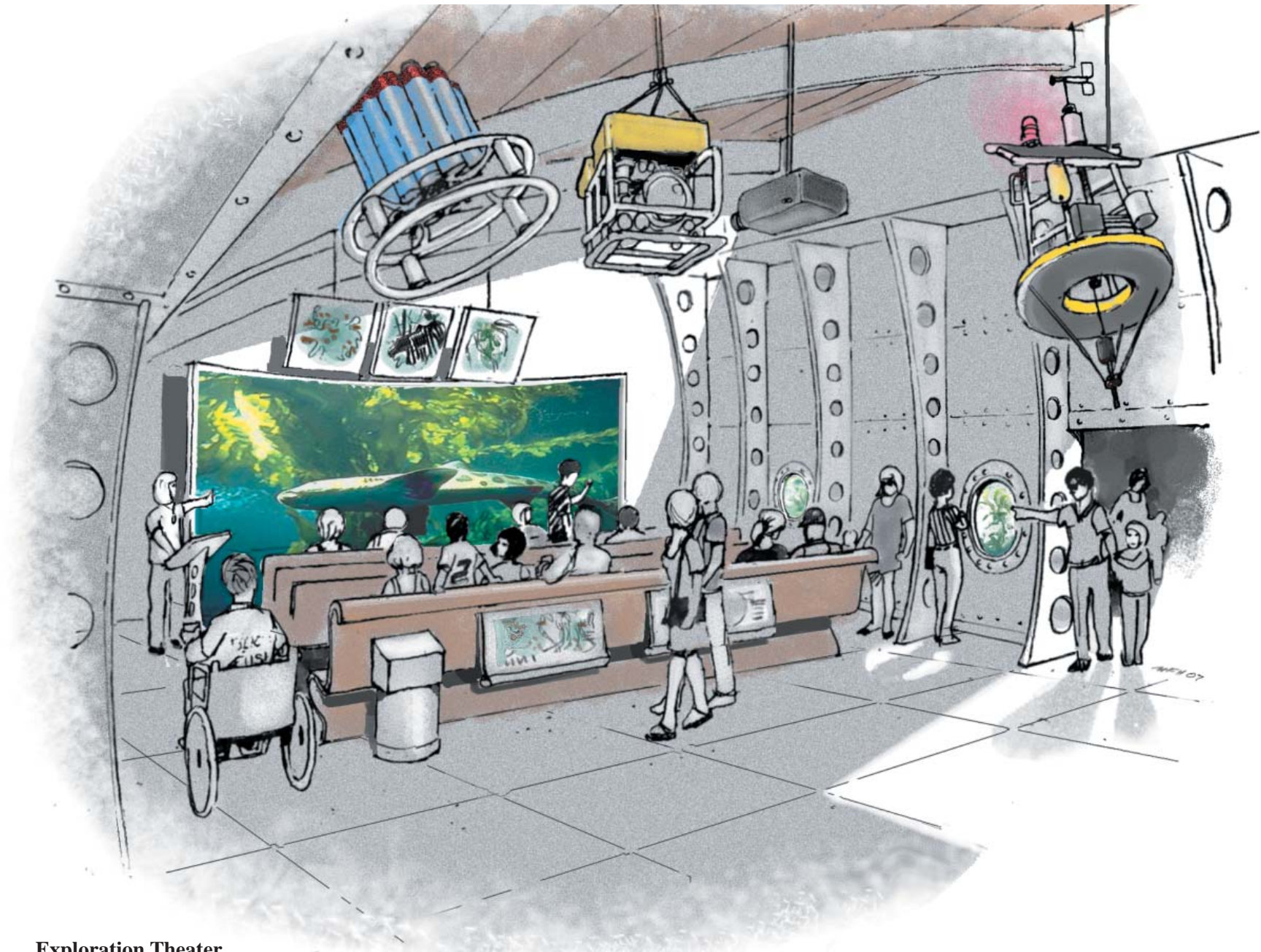
as agricultural runoff and marine debris. The panels also suggest ways in which visitors can make a difference in their watersheds.

Sanctuary Research

In the Geology Gallery, a rear projected computer-generated model of the MBNMS starts at the shoreline and progresses down into the depths of the submarine canyon to the Davidson Seamount. Visitors use a trackball to scroll across the screen which describes the sanctuary's features as they go. A wall mural follows the elevation of the sanctuary with captions relating the underwater geologic features to familiar, graspable landmarks. On a nearby counter, vertical core samples sit alongside touchable objects from sanctuary habitats from a tide pool to the canyon floor. These relate to exhibits in the Biodiversity Gallery.

A boat hull atop the gallery wall "tows" a multi-beam sonar device which projects real-time sonar images of visitors on a video monitor. Graphics describe how researchers use this technology to map the features of the sanctuary floor. Touchable deep-sea exploration equipment surrounds an interactive video kiosk that highlights research in the Sanctuary.





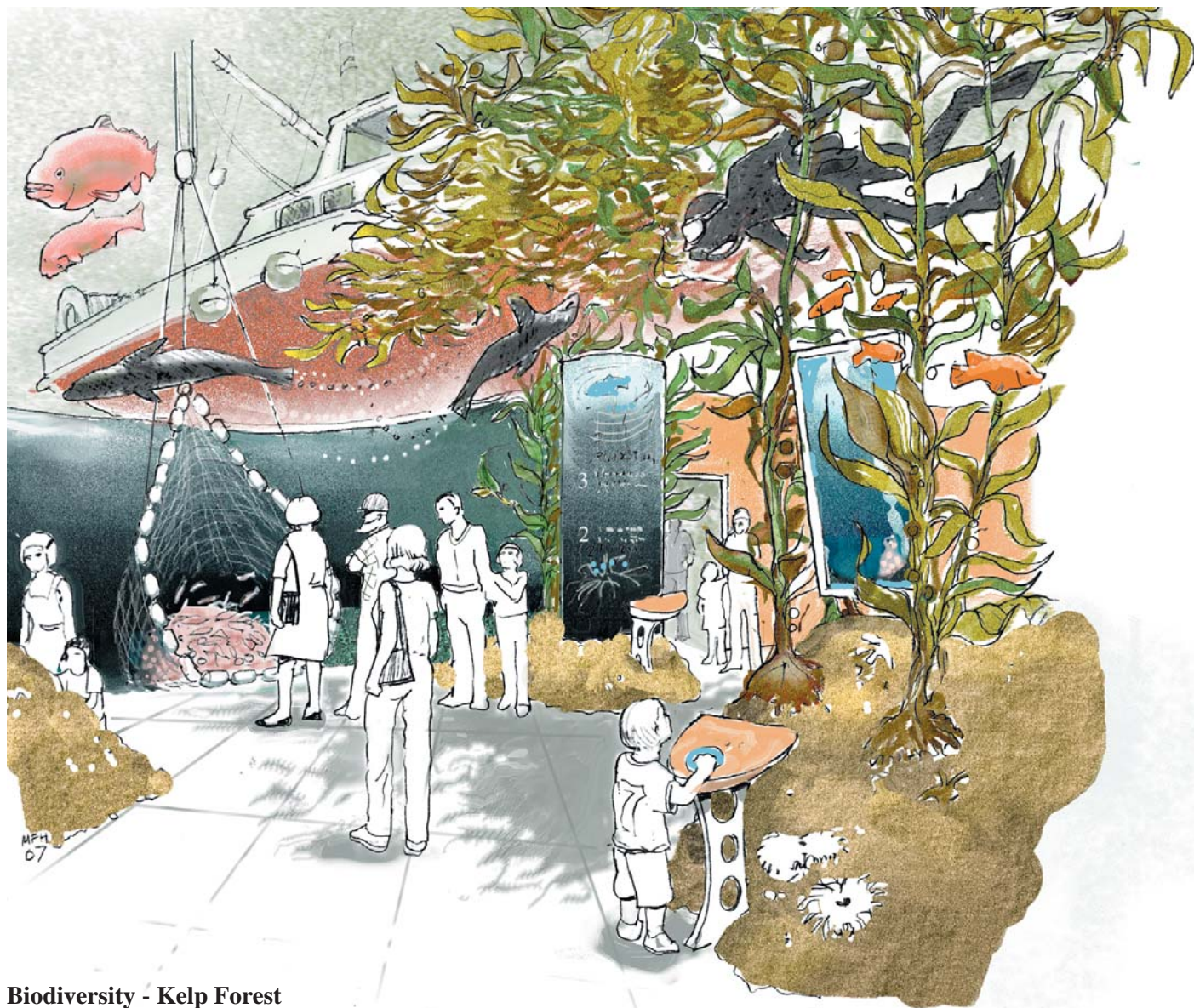
Exploration Theater

In the theater, actual footage from a remotely operated vehicle voyage and computer-generated animation shows visitors the canyon from Elkhorn Slough to Davidson Seamount, featuring rocks, marine snow, amazing deep sea animals and more. The theater is a multi-purpose room with flexible seating. It will be capable of projecting real-time video, slides, DVDs and computer-based presentations and will have audio equipment for guest speakers.



Biodiversity - Intertidal Touchpool

Exiting the theater, visitors are drawn to a beautifully re-created Rocky Tide Pool surrounded by wall murals that continue the view out across the sanctuary. One section is specially designed as a discovery area for small children featuring tidepool animals and algae. The central pool is filled with detailed models of tidepool animals. An overhead monitor shows a naturalist discussing this habitat's fragility until someone discovers the video station at the pool's edge. Then the monitor shows close-up images of and information about small, rarely seen tidepool animals. A third area challenges visitors with an interactive grid survey of tidepool life.



Biodiversity - Kelp Forest

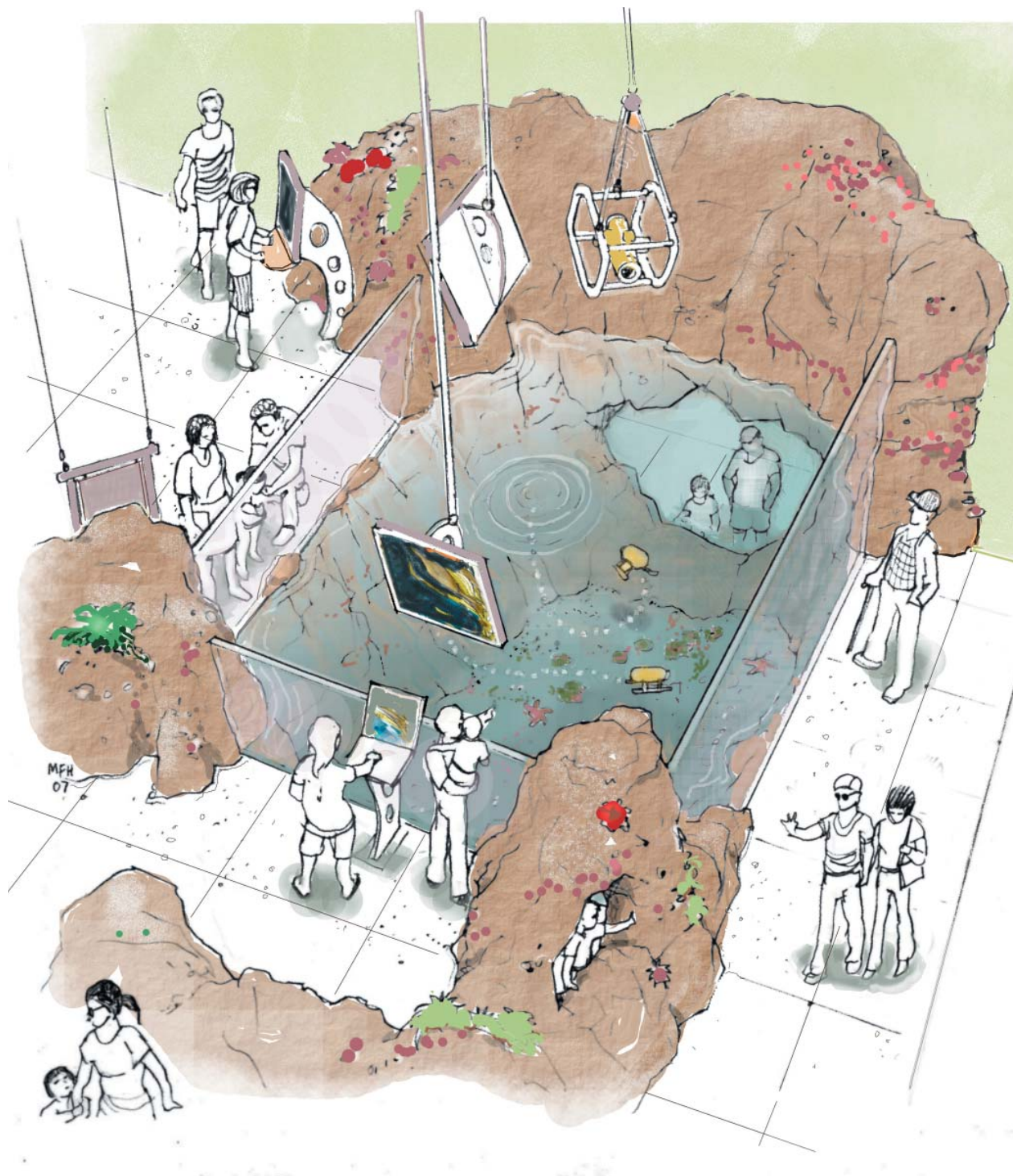
Across from the touch pool, visitors are immersed in a lush, rocky-bottom-to-ceiling Kelp Forest populated by models of top snails, kelp forest fishes, marine mammals, a cormorant and a kayak or diver. Touchable model holdfasts, sea stars, urchins, snails and cucumbers are on the bottom as well as marine debris. Visitors hear waves, whales, sea lions, snapping shrimp and divers' bubbles. A concise graphic panel explains biodiversity and how MBNMS is home to an incredible diversity of species which then move out to populate other areas.

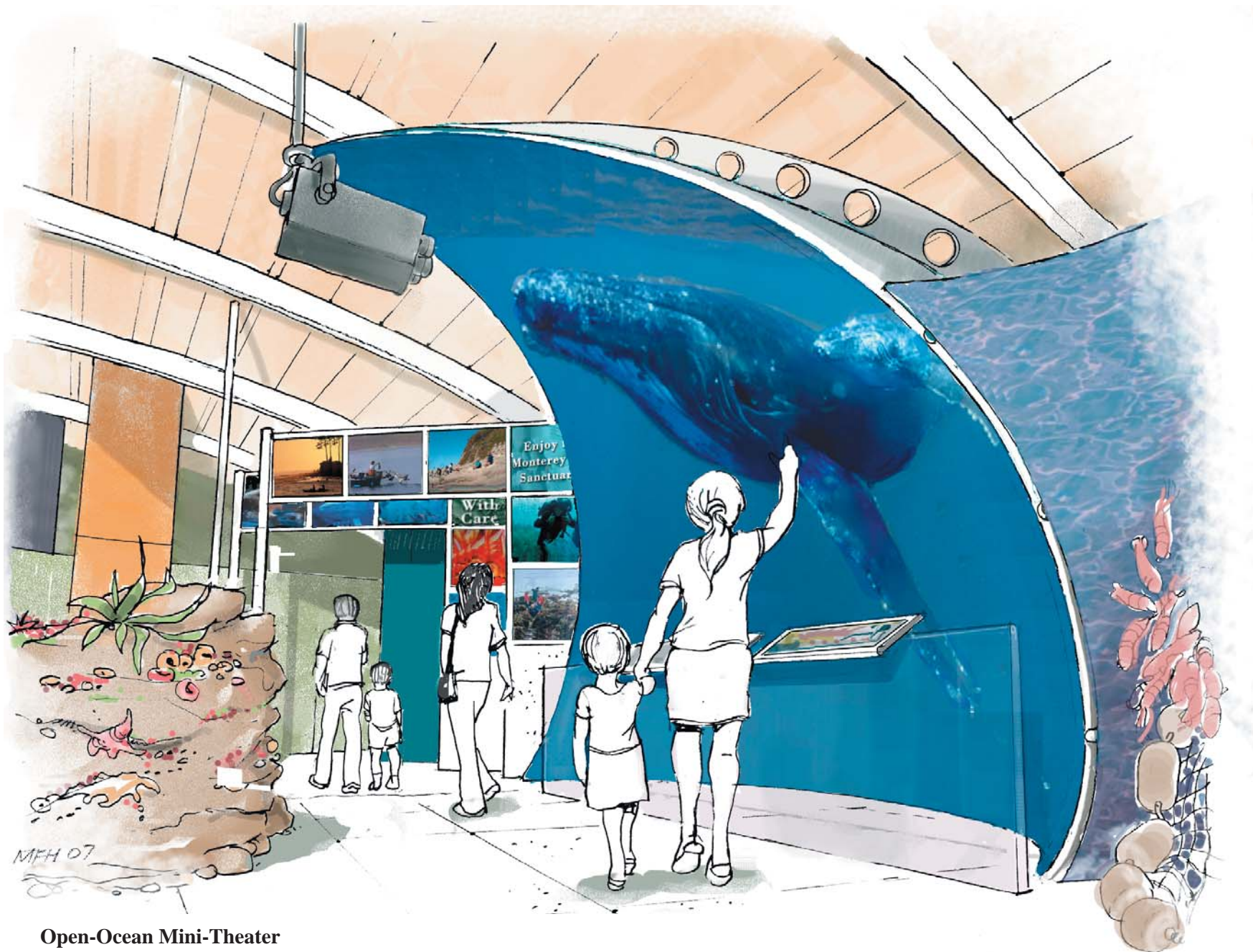
Captions on the objects identify them and explain their significance. For example, rockfish illustrate the study of what happens to species and habitats over time. This is a major focus of monitoring efforts in the sanctuary. Visitors can explore the zones in a kelp forest on a large, rear-projection screen controlled with interactive controls. Another video monitor identifies life in the kelp forest canopy.

Biodiversity - Submarine Canyon

Across from the kelp, visitors can look over or through a glass railing and into the Submarine Canyon they saw from the landing. From here, the visitors can use an interactive video to identify lanternfish and other deepsea animals barely visible in the dim light. They can also learn more about the newly discovered diversity of the deep sea and the techniques and technology researchers use to explore this ecosystem. Overhead, a pair of monitors displays images of deepsea rocks and animals in the exhibit, transmitted by VideoRay cameras controlled by visitors in a cleft in the rocks.

As the rocks give way to a Sandy Seafloor, an overhead fishing boat trails a purse seine full of squid. Graphics explain the history of sustainability in this area and the role Marine Protected Areas play in maintaining that sustainability. The interactive video here compares historical and contemporary fishing techniques and equipment, follows the decline and recovery of whales and sea otters, and may include role playing interactives.





Open-Ocean Mini-Theater

Seabird sounds draw visitors into the Open-Ocean Mini-Theater where they view stunningly beautiful footage that uses migratory species such as fulmars, sea turtles, dolphins, krill and whales to tell the story of the three seasons of the sanctuary and how they affect the weather, water surface conditions and kelp forest growth.

This is your Sanctuary

In conclusion, visitors pass between two banks of monitors. The first features images of the sanctuary's animals, reinforcing the message "This is your sanctuary, treat it gently." The second shows human activities and models positive behaviors to support the message "This is your sanctuary, do your part to protect it." Visitors see themselves on one of the monitors to emphasize that they are part of the sanctuary, too. Key words from the exhibits such as sanctuary, biodiversity and watershed also appear on the screens. The images and words change at a relaxed pace so visitors won't feel bombarded with information at the end of their visit.

As visitors proceed to the elevator and stairs to return to the Lobby, they see a collage of action photos on the far wall including surfing, kayaking, whale watching, fishing, SCUBA diving, beachcombing, tide pooling and bird watching. Who knew there was so much to do in the MBNMS?

Once back in the lobby, visitors may purchase marine-related merchandise from the Gift Shop or pick up maps to the MBNMS and other National Marine Sanctuaries. At designated times, they may go into the Classroom for a facilitated public program involving real-time video from the sanctuary or video feeds from other sanctuaries in the system. During the school year, the Classroom will offer standards-based educational programs to K-12 school groups enhanced by live organisms in seawater tanks.

